Evaluation-model-based Research on the Combination of Internet Platforms with the Ideological and Political Education in Colleges and Universities

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Abstract

The network-based online education plays a very important role in helping Chinese colleges and universities to transform their educational and teaching doctrines. The appearance of internet platforms offered learners an easier and more diversified access to educational resources. Although already shared by many professions and trades, the internet application in improving ideological and political education remain rare to see. Considering that, this paper introduced an approach to develop and design open network platform architecture with Java EE Enterprise Framework on the basis of network learning platforms. Then, an evaluation model was set up to verify the science and practicability of the design. The research revealed that the network platform plus ideological and political teaching model introduced in this paper could play a very important role in promoting the organic combination of all essential components of the ideological and political education and making the best of the ideological and political education in colleges and universities.

Keywords: Internet, MOOC Platform, Colleges and Universities, Ideologies and Politics, Design Researches.

1. BACKGROUND

1.1 Literature overviews

In current academic circle in China, more and more people began to study the ideological and political education in colleges and universities from the perspective of the internet era. Li and Wang held that by integrating the internet network technologies into the college ideological and political education, taking the internet technologies more seriously, making the best of the “treasure house of data” from the internet, continuously optimizing the teaching methods, helping the college ideological and political education websites to effectively play the role of thought guiding and network management regulating, the educators in this field would be able to open a new chapter in this area (Li and Wang, 2015). Also, in response of the impacts from the internet technologies, the Chinese college ideological and political educators should timely transform or improve their educational and teaching doctrines, particularly those involving the educational environment, teaching contents and teaching methods, to better meet the needs of the internet development (Deng, 2015). It’s also discussed that, with the internet development in the background, how the educators could more effectively and efficiently accomplish the ideological and political education for students, from the perspectives of teaching contents, forms and specific methods and tools, relying on an ideological and political education network, to meet the new requirements of carrying on such education in this network era (Liu, 2015). Some other scholars tried to explore the contents and meaning of college ideological and political education methods according to the characteristics of the internet era, urging to set up a special internet-based network and develop and launch mobile APPs for this purpose, while discussing some new innovation paths available to the college ideological and political education (Sun and Zhao, 2016). Meanwhile, it’s recommended that the educators should pay more attention to the “Internet+” Strategies. That is to say, the educators could develop more diversified online ideological and political course platforms and make more innovations to create a more harmonious cultural atmosphere for the college ideological and political education in this new era (Zhang, 2016). Starting from the network images, some scholars thought that the image masking technologies and the discourse creation capability had strong impact on the college ideological and political education. Therefore, the educators in this field should understand both positive and negative roles that these images could play and give a full play of the positive side of the network images in the education, and secure the positive influence that such image technologies have over the effectiveness of the college ideological and political education (Kuo, 2017).
The brief introduction of domestic research literatures above showed that in recent years of this internet era, the college ideological and political education had attracted a lot of attention in the Chinese academic world. But these researches mainly focused on the teaching forms, contents, approaches and methods and all of them were in want of depth and width. In view of the fact, the paper tried to take the network platforms as a breakthrough point, set up an evaluation model, and explore the designs that connecting the college ideological and political education with the network platform, to provide future ideological and political education innovation with an important direction.

1.2 Objectives

This research was centered on developing an open online ideological and political teaching and learning platform that supports courses management and content launch management, and help both educators and students accomplish the objectives of the online learning courses synchronizing with the college ideological and political education program. Subsequently, by analyzing the contents, features and advantages of the open online ideological and political learning platform currently promoted in Chinese academic circle, the educators could develop such network platform architecture for the college ideological and political education, with the help of B/S structure and Java EE Enterprise Framework (Zhang, 2017). An evaluation model was set up to verify the science and practicability of the platform design and help the educators to have an objective evaluation over the combination of the network platform and the day-to-day education. In short, using network and media technologies to improve the effectiveness, efficiency and quality of the ideological and political education in colleges and universities is of significant importance to Chinese ideological and political education reform.

2. THE DESIGN AND REALIZATION OF ONLINE COLLEGE IDEOLOGICAL AND POLITICAL LEARNING PLATFORMS

2.1 The fundamentals of network platform design

The coming of micro-courses and other new online education models has made the network education platform one of the key media of education and teaching contents and attractive to more and more educational practitioners. However, considering the limited continuity of researchers’ interest in the subject within a given period of time, it had become more urgent for educators to apply the MOOC platform in the ideological and political education. Since the miniaturization of learning objective, time and content design has become one of the minimum requirements of an open network platform, it is necessary to follow some frameworks to design an ideological and political learning platform (Lin, 2016). In some foreign countries, people have already begun designing or reconstructing the ways of applying network course in their ideological education. For example, in the United Kingdom, some colleges have begun providing educators with different media tools, applications methods, and design resources for them to use the network platforms in their ideological teaching and sharing their micro-courses college-wide. Among them, from the framework upon which an ideological course is built, taking the learners as the starting point and pinpointing the things they needs would be the most effective way to improve the college ideological and political education achievement. When a student completed a course, the platform could give him/her a clearer view about the main competence he/she had acquired. Usually, such a framework tries to instruct students to complete a series of tasks according to the target learning effectiveness of the ideological and political education. In addition, when integrating the ideological and political education into a network platform, the designers may convert the expected learning results into clearly defined learning activities and evaluation tasks and link all resources, teachers and communication tools with a string of learning tasks. The analysis over the existing research results in relation to the network platform in the college ideological and political education and teaching revealed that the platform is a systematic macro ideological and political curriculum made up of a series of micro courses (Lin, 2016). After careful design, the educators could combine the network platform with the miniaturized teaching objectives, contents and time of college ideological and political course and use micro-videos as the core media to pass information about students learning activities and performance evaluation. There is a correlation between them to an extent.

In the college ideological and political education, the time of a teaching class in a network platform course could be limited within 10 minutes and more diversified teaching methods may be introduced into such class teaching. In addition, by way of directly watching a demonstration plus knowledge explanation, the educators may choose to use one or a set of teaching methods according to the progress of learning and the characteristics of the learning contents. As a typical micro teaching method, the open network platform has already made some breakthrough in terms of distant learning, mobile learning and informal learning in the ideological and political education field, and more and more educators have begun paying more attention to the new approach and promoting its application.
Because the network-platform-based college ideological and political courses is based on videos, it’s now possible for the learners to transfer and take a class simply on a mobile terminal and, for educators to produce independent, in-depth and inter-connected videos around important ideological and political learning points, which eventually providing the learners with great convenience for learning. This, to an extent, has brought the college ideological and political education beyond the restriction of time and space and motivated the learners to pay more attention to learning situations and learning transfer. Judging from all the above-mentioned merits, it’s obvious that the open network platform could largely relief students a lot of burdens, effectively improve their learning effectiveness, and achieve better communication between the teachers and the students on ideological and political education.

2.2 The architecture design of the ideological and political network platform

In general, the design of a network platform framework begins with a proper understanding over the learners’ requirements over the non-functional parts of the system and the MOOC network platform architectures that already appeared in the college ideological and political education. By the way, a MOOC network platform usually provides such functions as open access, registration and log-on and password modification, etc. It can be concluded that the MOOC platform for the college ideological and political education should at least support the simultaneous access of a large amount of visitors, use the B/S system structure, and be developed on the basis of the Java EE Enterprise Framework (Lin, 2017). Considering the open access and large data processing needs, strict requirements should be clearly defined to control the complexity of data selected. In other words, the ideological and political teaching database should still be built with data cutting and distributed storage technologies and finalized with SQL Server 2014, which will determine the total time and frequency of persistent application of data. Since the ultimate goal of a MOOC platform is to build an open teaching platform capable of dealing with large amount of visits, it’s obvious that the servers should support load balance technologies to effectively reduce the overall distribution costs. On the basis of that, while releasing large amounts of online courses, the platform will be able to significantly improve the video-playing order processing part of the video server technologies and support ideological and political course learners to watch the course videos at the same time and at any time. In the college ideological and political education platform area, the designers should meet some high requirements involving the open network platform framework itself and its maintenance and expansion. It’s therefore necessary for the designers to adopt the MVC design models to reduce the coupling between the components of the network platform developed for the college ideological and political education.

The system extension and maintenance requirements of the network platform could be well met during the college ideological and political teaching. The component decoupling could be done by using lightweight frameworks, i.e. Struts2, Sping, Hibernate, etc. at the three layers of the platform. The network platform framework could be made up of three layers, i.e. the Web layer, Business logic layer and Data access layer, to support the actual implementation of the ideological and political teaching. The operating of the Web layer shall be enabled by the Serlet, sending data to the Business logic layer. Then the Spring takes over the data, finishing all necessary computing and sending data to the Data access layer for screening. Then the data are sent back to the Business logic layer for the information exchange with the learners. The information exchange shall be based on browsers that are good enough to guarantee the effectiveness of the exchange.

3. THE MODEL COMBINING THE NETWORK PLATFORM AND COLLEGE IDEOLOGICAL AND POLITICAL TEACHING

In order to integrate the network platform into the ideological and political education, the colleges could design Three MOOC Network Platform Packages as shown in Figure 1. First, by way of the Action Package and Service Package, the user’s requests shall be sent to the Data layer. The Control layer is a Structs2-based Action Group. Second, complete the data extraction with the JSP files. As for the Interface layer, it will integrate all Web pages on the platform, properly handle and process the requests from all ideological and political learners and provide them with learning feedbacks. Then, after receiving the data submitted via the Web pages, the Action Package shall encapsulate the data into a business entity and send all data related to the entity to the Business logic layer where the data are processed and sent into the Ideological and political database for real-time processing. Then, the data shall be forwarded to the Action layer where the computed and processed business entity data are provided to the learners via the browser. This is the process in which the interaction between the data in the database and the entity operating. Third, when combining the data that need to format time types in the ideological and political education activities, the tools will be able to play their roles in the most effective way. Or, when a learner execute an uploading or downloading order on the platform, these machine algorithms will upload files to the database or download them to a local folder.
Figure 1. Mooc Network Platform Bag

4. THE MODEL EVALUATING THE EFFECTS OF THE COMBINATION OF THE NETWORK PLATFORM AND COLLEGEIDEOLOGICAL AND POLITICAL TEACHING

Based on the above analysis over the models combining the college ideological and political education with college network platforms, the paper tried to present an objective evaluation over its application effects. In addition, in order to ensure the correctness and reliability of the evaluation results, the paper shall standardize all relevant indexes, select all indexes and factors of the college online ideological and political teaching model, and finally set up a comprehensive evaluation mathematical model as follows:

\[ SYS = \sum(S + E) = \sum(S + B + I) \]  

In which, the SYS stands for the college ideological and political education system, the S stands for the structure of the system, the E stands for the functions of the system, the B stands for the key factors in a teaching implementation process, and the I stands for the associated information in the education.

The model tells us that the college ideological and political education system is a complex integrating all factors of the system and proper functioning of the system requires an organic combination of all factors. The analysis over the combined model revealed that the college ideological and political education system is made up of six modules, i.e. the learner, the teaching environment, the types of textbooks, the organizer, the teaching and learning methods and the learning contents. In addition, all the six modules are the backbones of the overall structure and associated with each other in a way. By integrating these modules, here we have a basic model showing the synergistic effect of different teaching and learning models. It’s shown as follows:

\[ \phi_i(t_0) = \sum_{j=1}^{m} \omega_{ij} \phi_j(t_0) \]  
\[ \phi_i(t) = \sum_{j=1}^{m} \omega_{ij} \phi_j(t) \]  

Meanwhile, the synergistic effect of different teaching and learning models shall be defined as follows:

\[ \mu_{1,2,3,\ldots,m}(t_0 - t) = \omega \cdot (\phi_k(t) - \phi_k(t_0)) \]  

In the above model, \( \omega = \begin{cases} 1, \min_{1 \leq k \leq n} (\phi_k(t) - \phi_k(t_0)) \geq 0 \\ 1, \min_{1 \leq k \leq n} (\phi_k(t) - \phi_k(t_0)) < 0 \end{cases} \)
Apparently, when integrating the college network platform with the ideological and political education, the \( \phi_j(t) \) completes the integration and fulfill the overall function of the model \( S^i \). In addition, in an actual teaching and learning process, \( \phi_j(t) \in [0,1] \), the greater the \( t \) goes, the greater the model’s total utility \( S^i \) will be.

Based on that, here we have the exact values of different teaching and learning modules of the system. They are shown as follows:

\[
S^i = \sum_{t=1}^{m} f_t S_t (S^i \leq 1), \quad \tag{5}
\]

\[
S^i = \sum_{t=1}^{m} f_t S_t (S^i \leq 1), \quad \tag{6}
\]

\[
S^i = \sum_{t=1}^{m} f_t S_t (S^i \leq 1, \sum f = 1) \quad \tag{7}
\]

Then, conduct an overall utility evaluation over the teaching and learning models with following evaluation equation:

\[
V = F_e E + F_s S + F_t T \quad (V \leq 1, \sum F = 1) \quad \tag{8}
\]

In the above equation, the \( V \) stands for the total utility of the teaching and learning models of the system. The greater the \( V \) goes, the greater role shall the model play in the education. The smaller the \( V \) goes, the smaller role shall it play. From that we could see that the video servers used for the ideological and political education network platform could ensure reliable and stable linking and data support. Therefore, by comparing the request numbers, data offset and data throughput, as well as the response time, we could see that the network video server could withstand great concurrent pressure, meaning that it’s good enough to handle the simultaneous participation of large amount of students in an online learning activity.

5. CONCLUSION

In general, integrating the network platform into the college ideological and political education is an effective action for colleges and universities to further develop the ideological and political education mechanism and improve the teaching quality of the ideological and political courses. As was shown by the results of this research, it’s been proven by the test results that by combining the network platform design and the research findings, the two major functions of the platform meet all college requirements for carrying out the online ideological and political education. In addition, the effective integration and the continuous innovation after the launching of the online education mechanism could effectively improve the online learning quality of all ideological and political students.

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